

**WHAT IS CLAIMED IS:**

1. A voltage generator arrangement, comprising:

a first connection for a supply potential;

a second connection for a reference ground potential; and

a first output connection for an output potential to be tapped off;

a first reference ground potential line, the first reference ground potential line being connected to the second connection;

a second reference ground potential line being connected to the second connection;

a bandgap reference circuit, the bandgap reference circuit being connected to the first reference ground potential line and having an output connection;

an impedance converter circuit, the impedance converter circuit being connected between the first connection and the first reference ground potential line, the impedance converter circuit being connected on the input side to the bandgap reference circuit, the impedance converter circuit being a second output connection;

a voltage generator, the voltage generator being connected between the first connection, and the second reference ground potential line, the second reference ground potential line being connected on the output side to the first output connection to be tapped off, and on the input side, being driven by the second output connection;

the impedance converter circuit further producing an output potential, the output potential being higher than an input potential supplied from the bandgap reference circuit;

and

the voltage generator producing an output potential, the output voltage generator output potential being lower than the impedance converter output potential supplied from the impedance converter circuit.

1           2.       The voltage generator arrangement as claimed in claim 1, further comprising:  
2           a charge pump circuit, the charge pump circuit being connected between the  
3           connection for the supply potential (VEXT) and one of the reference ground potential lines,  
4           the charge pump circuit being coupled into the signal path between the bandgap reference  
5           circuit and an input connection of the voltage generator.

1           3.       The voltage generator arrangement as claimed in claim 1, wherein  
2           the charge pump circuit has an output connection for providing an output potential, the output  
3           potential being higher than the input potential; and  
4           wherein the output connection of the charge pump circuit is coupled to an input  
5           connection of the voltage generator.

1           4.       The voltage generator arrangement as claimed in claim 3, wherein  
2           the impedance converter circuit contains a comparator, an input side of the comparator being  
3           is connected to the bandgap reference circuit , an output side of the comparator being  
4           connected to the control input of the charge pump circuit to control the magnitude of the  
5           charge pump output voltage; and  
6           wherein the output connection of the charge pump circuit is fed back to the input side  
7           of the comparator.

1           5.       The voltage generator arrangement as claimed in claim 4, wherein the  
2           impedance converter circuit has a voltage divider, an input side of the impedance converter  
3           circuit being connected between the output connection of the impedance converter circuit and  
4           the first reference ground potential line and  
5           wherein an output connection is connected to an input of the comparator.

1           6.       The voltage generator arrangement as claimed in claim 5, wherein the voltage  
2 divider is fed back to an inverting input of the comparator and the bandgap reference circuit  
3 is connected to the non-inverting input of the comparator.

1           7.       The voltage generator arrangement as claimed in claim 3, wherein the  
2 impedance converter circuit has a comparator, an input side of the impedance converter  
3 circuit being connected to the bandgap reference circuit, an output side of the impedance  
4 converter circuit controlling a load transistor, wherein a load current path of the load  
5 transistor is connected between the output connection of the charge pump circuit and the  
6 output circuit of the impedance converter.

1           8.       The voltage generator arrangement as claimed in claim 7, wherein the bandgap  
2 reference circuit is connected to an inverting input of the comparator, and  
3 wherein the output connection of the impedance converter circuit is fed back via a  
4 voltage divider to a non-inverting input of the comparato).

1           9.       The voltage generator arrangement as claimed in claim 1, wherein the voltage  
2 generator has a comparator, an output side of the voltage generator controlling a load  
3 transistor

4 wherein the load transistor is connected between the first connection and the first  
5 output connection that is to be tapped off,

6 wherein the first output connection is connected directly to an input connection of the  
7 comparator, and

8            wherein the output of the impedance converter circuit is connected via a voltage  
9 divider to another input connection of the comparator.

1            10.    The voltage generator arrangement as claimed in claim 2, wherein the charge  
2 pump circuit contacts the first reference ground potential line.